

**City University of Hong Kong
Course Syllabus**

**offered by Department of Computer Science
with effect from Semester A 2017/18**

Part I Course Overview

Course Title: Java Programming

Course Code: CS2360

Course Duration: One semester

Credit Units: 3 credits

Level: B2

Arts and Humanities

Proposed Area:
(for GE courses only)

Study of Societies, Social and Business Organisations

Science and Technology

Medium of Instruction: English

Medium of Assessment: English

Prerequisites:
(Course Code and Title) Nil

Precursors:
(Course Code and Title) Nil

Equivalent Courses:
(Course Code and Title) Nil

Exclusive Courses:
(Course Code and Title) CS2311 Computer Programming
CS2362 Computer Programming for Engineers and Scientists
CS2363 Computer Programming

Part II Course Details

1. Abstract

(A 150-word description about the course)

This course is a introductory first course on the concepts and techniques of computer programming and problem solving using Java. No previous programming experience is required. The main objective is to equip students with basic concepts in procedural and object-oriented programming for problem solving. Students will learn good programming practices and the art of problem solving.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs [#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Create programs to solve simple problems.			✓	
2.	Design classes to sub-divide a problem to create a solution.			✓	
3.	Use selection, repetition and recursion for problem solving.			✓	
4.	Explore arrays, class libraries and dynamic structures to store and work with data.			✓	
5.	Follow, assess and critique good programming practices.		✓	✓	✓
		100%			

* If weighting is assigned to CILOs, they should add up to 100%.

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

Teaching pattern:

Suggested lecture/tutorial/laboratory mix: 2 hrs. lecture; 1 hr. tutorial

TLA	Brief Description	CILO No.					Hours/week (if applicable)
		1	2	3	4	5	
Lecture	Explain key concepts; highlight key concepts with relevant examples.	✓	✓	✓	✓		
Tutorial / Lab	Tutorials are designed to enable students to apply concepts into practice and be proficient in Java. The tutorial exercises consist of programming problems that students should solve within the tutorial class period. Students will experience the process and art of problem solving.	✓	✓	✓	✓	✓	
Assignment	Assignments are intended to be more challenging problems compared with tutorial exercises. Students are to analyze the problems, break them down into manageable sub-problems, and apply (and possibly combine) various techniques learnt from lectures and tutorial exercises in order to design algorithms for solving them. Then they are required to implement the algorithms as computer programs, and to follow, assess and critique good programming practices through program documentation.	✓	✓	✓	✓	✓	
Quiz	Quizzes give a chance for students to demonstrate their understanding on various programming concepts and apply concepts and techniques for problem solving.	✓		✓	✓		

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.					Weighting*	Remarks
	1	2	3	4	5		
Continuous Assessment: <u>50%</u>							
Tutorial exercises	✓	✓	✓	✓	✓	5%	
Assignments	✓	✓	✓	✓	✓	30%	Expected to have three programming assignments. The 1st assignment assesses CILOs 1, 3 & 5; the 2nd assignment assesses CILOs 4 & 5; the 3rd assignment assesses CILOs 2 & 5.
Quiz	✓		✓	✓		15%	
Examination [^] : <u>50%</u> (duration: 2 hours)							
Examination	✓	✓	✓	✓		50%	
						100%	

* The weightings should add up to 100%.

[^] For a student to pass the course, at least 30% of the maximum mark for the examination must be obtained.

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Tutorial exercises	1.1 ABILITY to apply the concepts for problem solving	High	Significant	Moderate	Basic	Not even reaching marginal level
2. Assignments	2.1 ABILITY to design and implement appropriate algorithms or approaches for problem solving	High	Significant	Moderate	Basic	Not even reaching marginal level
3. Quiz	3.1 ABILITY to apply basic procedural programming concepts and techniques for problem solving	High	Significant	Moderate	Basic	Not even reaching marginal level
4. Examination	4.1 ABILITY to apply procedural and object-oriented programming concepts and techniques for problem solving	High	Significant	Moderate	Basic	Not even reaching marginal level

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

(An indication of the key topics of the course.)

Problem solving techniques; elements of coding styles; basic data types and declarations; basic object-orientation, such as classes, inheritance and polymorphism; expressions; assignment; basic I/O operations and control structures; functions and procedures; parameter passing; block structure; scope of variables; structured data types; arrays; lists; files and advanced I/O; levels of abstraction; concept of data hiding; abstract data types and structures; iteration and recursion; basic flow-charting and/or simple UML diagrams.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	Y. D. Liang (2013). <i>Introduction to Java Programming (Comprehensive Version)</i> . Pearson, 9 th edition.
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2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	D. Eck (2014). <i>Introduction to Programming Using Java</i> . David Eck, 7th edition, free online: http://math.hws.edu/javanotes/
2.	Sun Microsystems (2007). The Java Tutorial, free online: http://docs.oracle.com/javase/tutorial/